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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,002	05/22/2001	Bernd Kleemann	011102	7502

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EXAMINER

AMARI, ALESSANDRO V

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,002

Applicant(s)

KLEEMANN ET AL.

Examiner

Alessandro V. Amari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/22/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Specification

1. The specification does not adhere to the preferred layout for a utility application. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Staunton U.S. Patent 3,045,532.

In regard to claim 1, Staunton discloses (see Figure 2) a grating with a multiplicity of parallel diffraction, structures succeeding one another periodically (1, 1', 1''), which are arranged on a support defining a base area and each incorporate a blaze flank (1) inclined towards the base area substantially at an angle (inherently, there is an angle of incident light which will satisfy the Littrow condition for the grating) and a counterflank (2, 3), wherein the blaze flank and the counter-flank form at the apex of a diffraction structure an apex angle which is less than 90° as can be seen at the top of the element 1, characterised in that the counter-flank (2, 3) comprises at least two substantially plane area sections (2-3, 3'-1') as described in column 3, lines 12-14 which, bordering one another and inclined relative to one another by an angle of inclination extend parallel with the extension direction of the diffraction structure as shown in Figure 2, wherein due to the inclination of the at least two area sections (7, 8) relative to one another the counter-flank (6) all in all exhibits a concave surface viewed from the light incidence side as described in column 3, lines 12-14. Staunton does not explicitly label his device Littrow. However, as illustrated above, the reference teaches all of the

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structure required by the claim in support of such a label. Thus, the structure of the reference must inherently support the label in the same manner as the structure of the claim.

Regarding claim 3, Staunton discloses that the angle of inclination (β) lies in the range from 90° to 150° as can shown (see angle between 2-3, 3-1') in Figure 2.

Regarding claim 4, Staunton discloses that the grating consists of quartz glass as described in column 4, lines 67-69.

Regarding claims 5 and 6, Staunton discloses that the grating comprises a coating increasing the reflectivity in that the coating is an aluminum coating as described in column 2, lines 54-56.

Regarding claim 10, Staunton discloses that the blaze flank comprises, measured normal to the extension direction of the diffraction structures, a minimum width of $g \cos(\theta)$, where g designates the grating period of the grating and θ the Littrow angle. Inherently, there will be some grating period and angle, which satisfies the Littrow condition and the minimum width limitation for the blaze flank.

Regarding claim 11, Staunton discloses the use of a grating in a diffraction order of the incident light wavelength above or equal to the 15th diffraction order. Inherently, one can have an incident light wavelength above or equal to the 15th diffraction order, which satisfies this limitation.

Regarding claim 12, Staunton discloses the use of a grating for the diffraction of UV light with a wavelength that is less than 250 nm as described in column 1, lines 42-44 and column 2, lines 9-12.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Staunton U.S. Patent 3,045,532.

Regarding claim 2, Staunton teaches the claimed invention except that the area sections exhibit a width ratio of 0.5 to 2 measured normal to the extension direction of the diffraction structures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the grating such that the area sections exhibit a width ratio claimed, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staunton U.S. Patent 3,045,532 in view of Tomono U.S. Patent 5,629,804.

Regarding claims 7 and 8, Staunton teaches the invention as set forth above but does not teach a dielectric layer system, which comprises layers of Al_2O_3 and MgF_2 . Tomono teaches a dielectric layer system which comprises layers of Al_2O_3 and MgF_2 as described in column 5, lines 66-67 and column 6, lines 1-2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate

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the dielectric layer system as taught by Tomono in the grating of Staunton in order to improve the transmissivity of the grating.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Staunton U.S. Patent 3,045,532 in view of Tomono U.S. Patent 5,629,804 and further in view of Urino U.S. Patent 4,991,937.

Regarding claim 9, the combination teaches the invention as set forth above but does not teach that the dielectric layer system comprises layers of LaF_3 and MgF_2 . Urino teaches the dielectric layer system comprises layers of LaF_3 and MgF_2 as described in column 3, lines 1-10. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the dielectric layer system as taught by Urino in the combination in order to improve the transmissivity of the grating.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava *Q14*
April 18, 2002



Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800